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(Continuation of Bibiliography 1933-1936 and Technical Literature Abstracts for 1936 had to be postponed to the next February Issue—EDITOR)

HELPING THE SPEECH HANDICAPPED SCHOOL STUDENT

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Recent surveys reveal that over 2,000,000 children in the schools of the United States have serious defects of speech. Most of these children are handicapped in speech, and therefore in personality, by lisping, stuttering, infantile speech, delayed speech, vocal inadequacies, cleft palate speech and spastic (birth injury) speech. Their disorders of vocal communication may be classified conveniently by causes: organic, psychological and functional.

Speech handicaps of organic orgin

Any injury to the speech organs—tongue, hard palate, soft palate, lips, teeth, nasal passages—usually causes defective production of the speech sounds produced by those organs. For instance, if there is a palatal cleft, the individual's speech is affected by a pronounced nasality. If the tongue is injured, such sounds as *s*, *l*, *r*, and many others are produced defectively. Speech handicaps resulting from inadequacy of the speech mechanism are outnumbered by those of psychological and functional origin.

Speech handicaps of psychological origin

Perhaps the most common speech defect attributed to psychological disturbance is stuttering. This, of all speech defects, is widely found to be the most difficult of correction. Other speech handicaps in this category are nurotic lisping, infantile speech, and hysterical loss of speech.

Speech handicaps of functional origins

The large majority of speech defects found among children in the American schools is of the "bad habit" type. That is, the children have learned incorrect habits of articulation and enunciation. It is interesting to note that over 50 per cent of all lisping children without injuries of the speech mechanism have mothers who lisp. The normal child learns to utter words before 18 months of age, from words uttered by the person most often in attendance upon it. The correction of speech defects of the "bad habit" type, in the very young, therefore, entails a speech re-education program for the affected child's mother.

What is being done for the speech handicapped

Broadly speaking, the bulk of speech correction is administered by speech teachers in the school systems. To be sure, there are some private speech clinics, and a few of the hospitals offer diagnostic or corrective services or both. For instance, of the 167 hospitals in New York City, seven offer diagnostic or corrective services in speech disorders. Wisconsin and California have state-wide programs of speech correction, and a number of cities, especially the large ones like New York, Philadelphia and Detroit, provide speech correction. Many universities and colleges have introduced speech clinics for their students as well as children's clinics. The pioneers in this work are the University of Wisconsin, Cornell, University of Iowa, University of Minnesota, Teachers College, and the College of the City of New York.

The demand for speech correction has been so definite and persistent that in spite of the depression, the movement has grown. This has resulted in a need for adequately trained speech correctionists.

Qualifications of the speech correctionist

According to the standards of the American Speech Correction Association, the speech correctionist, in order to apply for certification, must have pursued graduate courses in an approved institution of speech pathology, phonetics, psychology, mental hygiene, physiology of the speech mechanism, social case study, and clinical practice. The course of study usually covers a year (two terms) and often two years.

Helping the speech handicapped student

The problems involved in aiding the speech handicapped, from the correctionist's point of view, may be thought of under eight categories: (1) Finding the student with a speech handicap; (2) Diagnosing the speech handicap; (3) Enlisting the aid of cooperating agencies; (4) Providing adequate corrective measures; (5) Checking progress; (6) Providing guidance; (7) Providing extra-curricular activities; (8) Experimenting.

Finding the student with a speech handicap

The speech correctionist, whenever possible, conducts entrance speech tests so that every student is assured of an objective estimate of his speech and hearing. The speech correctionist has learned to mistrust such procedures as selecting students on a volunteer basis or enrolling them in the speech correction class as a result of their responses on entrance questionnaires. Frequently he administers the entrance speech test in conjunction with the physical examination.

Diagnosing the speech handicap

The results of the speech tests are recorded and, together with the results of the physical and intelligence examinations, form the bases of the diagnoses. Those students with speech defects of the "bad habit" kind are enrolled in speech correction classes. Many times the speech correctionist enlists the aid of other agencies in arriving at a diagnosis of those speech defects of organic or psychological origin.

Enlisting the aid of cooperating agencies

In school systems that do not have physicians and psychologists the speech correctionist must often turn to outside agencies for help. Such organizations as the Leagues of the Hard of Hearing, the Child Study Association of America, the American Speech Correction Association, and the American Medical Association in addition to local medical, dental, and mental hygiene clinics cooperate heartily. As a result, the speech correctionist need not venture into highly specialized fields for which he is not usually prepared adequately.

Providing adequate corrective measures

After the diagnoses have been completed the correctionist plans a speech correction program for each affected student, making it as complete as time and money will permit. In many schools this means no more than one hour of weekly attendance in the speech correction classes. Because of the insufficient amount of time, in such instances, the speech correctionist usually enlists the help of the speech handicapped students' parents and classroom teachers in cooperating to supervise the corrective measures. Such a procedure demands frequent checking in order to insure optimal results. The corrective exercises and directions are of course well defined and divided into simple steps of weekly accomplishment.

Checking progress

In undermanned school systems, a large portion of the speech correctionist's time is devoted to checking the progress of the speech handicapped students. When the aid of parents and classroom teachers is enlisted the correctionist must interview the speech handicapped students each week and test their progress, and as a result revise the rehabilitative program accordingly.

Providing guidance

Aside from the corrective program per se, the speech correctionist is called upon to supervise the personal, educational, and vocational guidance of his charges. It must be remembered that a serious speech defect often entails personality disorders. Feelings of

inferiority, rebelliousness, moroseness, and the like must be corrected in any wholesome speech rehabilitation program. Often the speech handicapped student has concomitant disorders of silent reading and spelling, and sometimes his schedule and study habits need supervision. Or, in the case of the stutterer especially, he must be provided with vocational guidance. Since the adequate speech correction program must be built around the needs of the individual student, the guidance program plays no small part in the rehabilitating process.

Providing the extra-curricular activities

An important aspect of the guidance program for the speech handicapped student is providing him with extra-curricular activities. Because of his speech handicap, the student is prone to avoid group participation, and consequently, develops a highly introverted attitude toward life. The speech correctionist not only encourages the speech handicapped to join in extra-curricular activities, but he often organizes a speech club or initiates a speech activities program to provide, in part, for the socialization of the speech handicapped student's personality.

Experimenting

Lastly, the speech correctionist is faced with the problem of improving his methods of teaching and conducting the speech correction program in his institution. In addition to taking an active part in his professional associations, he finds that conferences with his superiors and cooperation with his parent-teacher organization often aid him to further his experiments for increased efficiency and service.

NOTE

The above is being sent by the Bureau of Research and information of The American Speech Correction Association to school superintendents and educators all over the nation. Dissemination of such data will, it is hoped, be of service to the youth of the country who are in serious need of special educational attention. For without it their generally high intellectual potentialities will never be able to properly unfold.

SPEECH DEFECTS IN HANDICAPPED CHILDREN[1]

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According to a report issued by the U. S. Bureau of Education in 1918 there were only six cities then offering special educational facilities for crippled children. By 1924 this number had increased to at least fourteen cities offering remedial training. The study made by the White House Conference Committee in 1930 indicated a large increase in number of cities offering work for all types of handicapped and retarded children, but there was still a great lack of educational facilities for the mildly handicapped, the speech defective, and children with other special handicaps.

One reason for lack of educational opportunity for the crippled child is the cost of transportation or the expense to boards of education for furnishing individual instruction for such children at home. In remedial speech training there are always more children in need of help than there are community facilities for taking care of them.

Ideally one would prefer to have a medical and a psychological report on every speech case before training is begun, but practically it is often impossible to secure this. Few of us realize that even in free clinics, where the parents pay nothing for service, it is estimated that the cost to the community is about two hundred and fifty dollars per child for giving the series of examinations necessary to making a diagnostic report, which will be useful to the teacher or parent. Our free speech clinics are greatly in need of endowment to enable them to operate with the efficiency which we all desire.

Even when the diagnosis of cases is in the hands of medical experts, the speech pathologist needs training in fields tangent to speech disorders. She needs to know when the child should be referred for medical, psychiatric or psychological treatment in addition to speech correction. Speech deterioration is often an important diagnostic symptom to the psychiatrist or the psychologist. The symptoms range from a comparatively mild dyslalia to serious impediments as in stuttering, aphasia, and psychoneurotic manifestations, or actual psychoses. There may be an actual brain lesion as in birth palsy, or there may be retarded development due to severe diseases of childhood. Sometimes it is impossible even for

[1]Paper given before the Western Association of Teachers of Speech, Pasadena, California, November, 1936.

the experts to determine whether there is an organic or a functional disability. In time it is to be hoped that our national speech correction society may help to determine standards for workers in the field of speech pathology, much as the American Psychological Association and the American Medical Association have done for their organizations. The speech worker must have a wide general foundation and adequate professional preparation because one might say that our work is related to every walk of life, every vocation, every social and economic pursuit. We use mathematics and other subjects occasionally, but we use our native tongue every day. We should seek to improve speech by our constant practice; sometimes it seems, however, to grow worse and worse.

Just a word about entrance requirements and eligibility. First, these children must come from homes where there is an economic necessity for free treatment. Second, the child must pass through the routine medical examinations before being admitted to the speech clinic, and psychological examinations will be given if indicated. Third, children must not be over sixteen years of age. Religion and race are not considered, but the child must be able to profit through training.

As to the type of children who come to the speech clinic, I will quote from our annual report for the year 1934–35. In that year the occupational background which the largest number of families represented was the skilled-labor group, or Group III, on Barr's Occupational Rating Scale. The next largest numbers were equally divided between Groups IV and V on Barr's Scale, viz.: the semi-skilled; and the unskilled, unemployed group. It is probable that with the prolonged depression we have been receiving children from a poorer economic strata than before, and these children have been referred by various charitable agencies, whereas previously more children came through the efforts of the parents themselves. Fewer parents in the lower occupational groups are usually active in seeking speech clinics, we find, than are the agencies by which they are referred.

As to medical background for the speech patient during the same year, 20 per cent were birth palsy cases. In these, excessive motility, diffuse motor discharge, and lack of voluntary control of the speech mechanism caused the speech to be difficult, labored, indistinct, unintelligible or lacking. About twenty per cent of the cases referred had been treated for glandular dyscrasia, some with and some without having had birth palsy. About ten per cent were infantile paralysis cases. Although this disease most frequently involves the lower limbs, we find that the nerves supplying the tongue are sometimes also involved, interfering with the pronunciation of certain consonants. Speech training in these cases is not usually undertaken for at least one year following the attack, as nature sometimes brings a complete recovery. There were about forty per cent of the cases referred for one or more of the following orthopaedic conditions: knock-knees, flat feet, poor posture, or deformities following rickets.

ORTHOPAEDIC HOSPITAL SPEECH CLINIC

LOS ANGELES, CALIFORNIA

Dr. Stinchfield and four bright little youngsters, profiting by the specialized speech training here made available to them.

GEORGE
Hydrocephalic and birth injury

TOMMY
Birth injury

HOWARD AND SAMMY
Stutterers

In these cases the prognosis is more hopeful and the treatment requires a shorter time than is needed with the birth palsy and spastic patients.

One of the interesting things about our work has been the discovery that the median mental age was less than two years below the chronological age. While the *mental* age was seven years, three and one-half months, the *actual* age averaged only eight years for our patients, in spite of the fact that there were some children to whom an indeterminate I. Q. had been given. The median I. Q. was between 87 and 100, or within the range of normal intelligence. Feeble mindedness is therefore not the primary factor in producing speech defects in the orthopaedic group. This is a hopeful note for the trainer.

As to the type of speech defects represented, the largest number during the years 1934 and 35 were dysarthria cases, in which there was an organic involvement. Next came dyslalia, varying from indistinct speech and baby talk to cleft palate speech, deafness or auditory deficiency. Stuttering, or dysphemia, was present in about the same proportion as dyslalia. There were a few cases of vocal defects, such as tremulous voice in post-encephalitis. There were a few reading disability cases and a few mixed cases, such as stuttering and lisping. Since the dysarthrias, particularly in the birth palsy cases, constitute one of our largest groups, I have made a film representing a few cases of this type. You will recall the longer film presented a few years ago by my predecessor, Dr. Chas. G. Stivers. That film represented a contribution which has not been followed up in many speech clinics, to my knowledge. Dr. Stivers was a distinguished member of the American Speech Correction Association and we should not forget his important contributions to the field of speech pathology. He was the first, so far as we know, to combine physiotherapy, corrective gymnastics and pool therapy, with relaxation, in the treatment of speech disorders.

Much emphasis is placed upon pool therapy and muscular relaxation in the work at the Orthopaedic Hospital—the development of this phase of Orthopaedic treatment being one of the important contributions of the chief of staff of the hospital, Dr. Chas. L. Lowman. In addition the spastic case may require splinting and stretching of spastic muscles, application of braces, physiotherapy, corrective gymnastics, muscle training, operative work followed by splinting, plaster casts, and medicinal therapy. As to results, while it is often impossible to overcome all the spasticity, the deformity may be lessened, the posture improved, the extremities straightened; and with the child's ability to walk and talk, educational development is possible. This implies that when we free the child's limbs, we free the mind of some of its fetters.

A brief summary of the cases shown in the film follows:

Case I. Eddie

Chronological age, 5 yrs., 4 mos.

Working **diagnosis:** Cerebral birth palsy; spastic quadriplegia.

Complaint: Incoordination of the extremities. Could not sit, stand or walk alone at two years.

Obstetrical history: Difficult labor; normal weight; first-born child; instrumental delivery.

Developmental history: Breast-fed 4 mos.; delayed dentition; attempted speech sounds at 1 yr., but feebly; dysarthria quite marked; little effort to use right hand; strabismus of left eye; marked spasticity of the extremities; reflexes obtained unsatisfactory.

Psychological findings: C.A. 2 yrs. 2 mos. M.A. 3 yrs. I.Q. Bright normal. Retarded speech development. Retest in 1935 indicated a very high I. Q., placing this child in the near-genius group, mentally, in spite of his speech defect and physical disability.

Therapy: Given pool therapy at 2 yrs. Tried to walk, advancing left leg only. Braces applied late in second year; took a few steps with support. Medication and pool therapy a part of his treatment.

Late in 1935 he began walking, with support, wearing his braces; improved use of hands. Sometimes walked across room without aid, wearing braces. Improved balance noted. Pool therapy continued during 1936, better relaxation secured, floats on back in pool, abducts hips, lying down.

Speech: Marked dysarthria at 2 yrs. Has gradually improved. Speech progress seems to have kept pace with improved use of arms and legs.. As the larger fundamental muscles have come under better control, he has developed better use of the finer accessory muscles used in talking.

He has been photographed in his Hallowe'en costume, this being his own idea of how one should "dress up" when having a picture taken. Going to have his picture taken, was to him like going to a party.

Case II. Tad

Some of you may recall having seen Tad's picture last year in another film. We have photographed him again this year to show his improvement in gait, balance, walking and control of muscles of head and neck, while talking.

Normal intelligence.

Diagnosis: Paralysis; Spastic Hemiplegia; left side; Cerebral birth hemorrhage; athetosis, (hands).

Complaint: Spasticity.

Obstetrical history: Difficult labor; second child; normal weight; bottle fed.

Developmental history: Walked (with difficulty) at 2 yrs. Did not hold head up until 7th month; fell frequently in early walking efforts. Difficulty in using extremities and in bringing food to mouth; disturbed gait. General involvement, but with definite cortical and basal ganglion localization.

Therapy: Exercises given in gym, following admission to speech clinic in 1935 and 1936. Gait characterized by flexion at hips and knees. Spasticity of head and neck muscles when he began to talk; 1935 gait and posture improved; walks without support.

Speech: Gave only whispered speech responses at first. Words whispered were infantile, indistinct and contained substitutions and inaccuracies. Could not be induced to talk aloud very often, and then in a faint little voice. Referred to speech clinic in 1935.

Therapy: Toys, pictures and objects used mostly for speech stimuli. Relaxation, breathing, counting, vowel sounds used, trying to project sounds across the room. Learned to bring hands to mouth, in eating, when told that he would have to do this, in order to eat his ice-cream cone at the annual Walt Disney Party given at the hospital. Has since eaten much more easily and puts forth greater effort to help himself. This month entered a small kindergarten and last Saturday he repeated the Flag Salute he had just learned in school. Voice still rather thin and lacking in volume, but he is much less self-conscious, likes to talk and to show his progress. His extraneous muscle movements have been much reduced, so that he talks with far less effort than a year ago.

THE THEORY OF REGRESSION

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From the Speech Clinic of the College of the City of New York

The theory of regression is applicable to all disfunctions of the human organism of a retrograde nature and hence is especially valuable in the estimation of stuttering, aphasias, disfunctions of writing and spelling.

The human organism must be considered as a biological entity—a unit or a whole. This unit manifests itself and is apprehended by other unities through the use of functions. Every function of this biological unit is regarded as the possessor of a "level of stability." Furthermore, not only has every function a level of stability, but every function requires a given level of stability in the organism itself, before the given function can operate.

Stability is defined in terms of functions and in the orientation of the organism in an environment or medium. The "level of stability" of an organism at a given moment is, therefore, the equilibrium of the organism at any given moment, as determined by the given function at that moment. Every organism has, at any given moment, a level of stability obtained as a resultant of its general health and capacities, and the function at the moment. As can be seen, there is a close interplay between function and organism because of the part that stability plays; both before the appearance of the function, during the performance of the function, and as a resultant of the effect upon the organism of the performance of the function. Those result in a hierarchy or system. Each link depends directly, and arises from, each preceding function and preceding level of stability.

Every function has a given level of stability. It is considered that those functions arising earliest have an inherently high level of stability and require a comparatively low level of stability in the organism in order to function. Also, those functions arising the latest, comparatively, have the lowest level of stability and therefore require a comparatively high level of stability in the organism in order to operate. Thus there is visioned a series of functions, each of which possesses a quantitative level of stability depending upon its precedence of emergence in the evolutionary ascent of the organism.

We have, therefore, a hierarchy, functionally speaking, pyramidal in structure, in which each function depends upon the preceding. These are represented in Table I.

TABLE I

COORDINATIONAL ACTIVITY
Writing, Speaking,
Abstract Thinking,
Etc.

PSYCHOLOGICAL REFLEXES AND LEARNED BEHAVIOR PATTERNS

SMALL MUSCLE ACTIVITY

Winking	Focus of Eyes
Wriggling Toes	Moving Eyebrows

Etc.

LARGE MUSCLE ACTIVITY

Walking	Grasping
Running	Crawling

Etc.

THE GAMUT OF EMOTIONS

Fear Love Rage

INHERITED PATTERNS OF CONDUCT

Sucking	Grasping
Swallowing	Winking of Eyelids
Chewing	Focusing Receptors to Stimuli

THE CHEMICAL REFLEXES

Alkaly and Acid Reactions	Sodium and Potassium Balances
Adrenalin Reactions	Etc.

THE BASIC BIOLOGICAL FUNCTIONS

Respiration	Motion	Excretion
Sensation	Reproduction	Digestion
Circulation	Assimilation	Ingestion

The biological functions, basic to life, possess the greatest amount of stability in themselves and require little stability in the organism in order to function. These are the functions which would operate under almost any level of stability. The next step, that of the chemical reflexes, has the next greatest amount and requires a little more in the organism to function than does the lower step, covering the basic biological functions. As we ascend the steps of the pyramid, we find a decreasing inherent level of functional stability which requires in the organism an increasing level in order for the function to operate at normal efficiency.

The levels of stability in Table I are neither exact or conclusive. They are approximate and liable to change with increasing knowledge resulting from biological investigation.

The organism, therefore, is evidenced by functions each of which has a level of its own and which contributes to round out the picture

for the organism—the unit or whole. In short, the level of stability of the functions sum up the level of stability of the organism. As can be seen from Table I, that level depends upon two factors. It depends upon the capacity of the organism. This is an inherited characteristic and dictates the limit to which a function or a hierarchy of functions may develop. It also depends upon the stage of development of maturation of the individual. This is an acquired characteristic and may be physiological or psychological or both. The interplay of these two elements produces a given level for the organism.

Every organism has what is termed a "threshold of stability." This is defined as the point at or below which the organism must fall back from a higher level to a lower with a corresponding retrogression to a lower function (i. e., a function requiring a lower level in the organism) from a higher function. This threshold is that level at which the organism undergoes a disintegrative process and is forced to fall back upon a level at which it can function at its former efficiency (physiologically).

The "range of stability" is the distance quantitatively, between a given level of stability and a given threshold of stability and is the distance through which that level must approach a fixed threshold for disintegration to occur in the organism. It might be termed the resistance of the organism to a disintegrative force.

Now when an organism is exposed to an unstabilizing force of any sort so that the level of stability is forced down to or below its threshold stability, then that organism must regress from the level of the function in question to a similar function which embodies a greater amount of stability. The organism in order to have an outlet for a specific form of energy would, of necessity, be forced to utilize a function that emerged prior to the appearance of the displaced function in the evolutionary ascent and upon which the displaced function rested, in part, for its level.

An example to illustrate this point would be the case in which a man, trapped by a fire, finds the only exit to be the door. His fear so disintegrates him that he finds he cannot walk. Therefore, he falls upon hands and knees and crawls to the door.

In the field of stuttering, the individual has regressed to a form of speech that preceded normal speech—namely, the utilization of separate and distinct speech sounds. This phenomenon (Regression) is not restricted to stutterers alone, but will occur in so-called "normal" people and in many occurrences as a temporary aphasia, disfunctions in writing and in spelling. It will occur whenever the organism's threshold of stability is reached.

Whenever an organism reverts back to a function with a greater level of stability than the displaced function, two resultants ensue.

First, the organism now operates at a more stable level. This is due, in the main, to the fact that the function, having an inherently greater level of stability, requires a lesser level in which to function. Since the organism is now functioning on a level greater than the level before the displacement of the function, its neural efficiency

should be greater. That is to say, the reaction time of nerve impulses (not masked by muscular contractions) should be less. Dr. Lee E. Travis in an experiment on the neural impulses of the patellar reflex reports results that support this contention.[1]

Secondly, we find that when the organism has regressed to a more stable function, the various organs of the organism which formerly cooperated to produce the displaced function now also deviate back, and again take up their old rhythm of operation. In the production of a higher function (less stable), the individual organs comprising the mechanism of that function, evolved a new rhythm for the function which was adopted by all the organs involved. However, with the retrogression of the function to a more stable function, the organs each resume their own individual rhythm, dropping the newer superimposed rhythm which the higher function (less stable) had demanded of all the involved organs.

In his "Speech Pathology," Dr. Lee Travis cites instance after instance in which not only are the rhythms of breathing created by the thoracic and diaphragmatic muscles not in accord, but actually opposed to each other. In this instance, the organism, comparable to a "colony," shows the regression from a very high level of association to a lesser.

As is to be expected, whenever the organism is exposed to an unstabilizing force and is forced to regress to a more stable level (for the organism) of expression, a lesser control of the musculature results. Inasmuch as higher functions involve increasing specialization and increasing muscular control, it is quite evident that with the regression to a lower function (more stable) the fine, razor-sharp control of muscles is dulled or lost. This results in expressional performances that not only are below what should be expected but bring along with them resultants that start a vicious hierarchy of poorer and still worse results.

The disintegrating force or unstabilizing factors are infinite in number. Anything which tends to lower the stability of an organism or any succession of similar factors or any combination of factors occurring either together or spaced during a period of time is an unstabilizing factor. These factors include:

1. Psychological Elements (because of the metabolic activities they induce and because of habit patterns resulting from these activities).
   a. Sudden shock
   b. Suggestibility
   c. Inferiority

[1]In a series of three articles Lumsden in 1923 advanced the theory that the centers, controlling respiration, at the different levels evidently constitute an ascending, integrating series. In all such integrations each member of the series partially inhibits the member immediately below it and at the same time imposes its own, more differentiated form of functioning upon the active remnant of the more primitive mechanism. In this way each higher member rids itself by inhibition of what is cumbersome or useless in the more primitive mechanism while retaining what is essential and cooperative.

d. Novelty
e. Frustrations of any sort
f. Emotions—fear, love, rage
i-x. Etc.

2. Physical Elements.
a. Sickness
b. Fatigue
c. Lesions in the brain
d. Any condition characterized by lack of tonus
e. Endocrine imbalances or disfunctions
f. Frustrations of the dominant organs
g. Lack of nourishment
h. Focal points of infection in the body
i-x. Etc.

Organisms constantly endeavor to maintain a level of stability above their threshold. When an unstabilizing force is brought to play upon an organism it promptly regresses to a more stable level, thus raising its level of its own volition as long as it functions at this more stable one. The organism will always continue this process as long as it is subjected to unstabilizing forces. This maintenance of stability, functions on the subconscious level, nor can the will of the individual do anything to control or arrest it.

When a disintegrating element forces an organism to regress, the lower function sets up a hierarchy of functions and a secondary effect ensues. Just as in a large number of diseases, the first onslaught is rarely fatal but the secondary effects and complications, such as weakening of the heart or failure of the respiratory functions or consequent shock, is almost always so. So in the disfunctions of our organism, we find that long after the organism has thrown off the effects (raised the level of stability) of the unstabilizing force, it may continue to employ the lower functions as a secondary factor when it is capable of resuming a higher function. Such elements as habit, greater organismic-stability, secondary physical defects, etc., may combine or result to produce this secondary form comprising or based upon the lower, socially undesirable, function.

Functions arise out of functions to form a hierarchy of habits and means of expression. The organism may spontaneously recover the use of the higher functions as the "normal" person does after a lapse, or it may develop secondary effects which are of serious consequences in the re-education of the organism.

In the prognosis of a disfunction due to a retrogression two dictums are imperative:

1. We must first discover the precipitating unstabilizing factor. This is important, not only to clear up the symptom, but to lay bare the internal disfunction and to build up the stability of the organism in the direction indicated by the nature of the unstabilizing force.

2. The re-education of the organism must begin at a level below that of the function to which the organism has retrogressed in order for it to be of any permanency. In stuttering, for example, the

usual re-educational procedure begins with a controlled rate of speech which is at the same level of stability as the speech of the ordinary stutterer. This explains why stutterers are not cured permanently, but constantly recur to their stuttering form of speech after a period of years when a new or the same kind of unstabilizing force presents itself.

The re-education of stutterers should begin at a lower level than the control of the rate of speech. The new level should begin with breathing. The roots of stuttering go down below the associational level to the control of fine and large muscles (see Table I). We must therefore commence re-education beginning with the large muscles and the breathing rhythm which is more stable than the associational level controlling speech and is at least as stable as the primary or secondary effects, or the roots or habits resulting therefrom.

Re-education which begins upon a level of stability which is great enough, will tend toward permanency.

It has been said above, that an organism which has regressed, has increased neural efficiency and decreased muscular efficiency. The neural efficiency results when the organism regresses from a higher to a lower (more basic) control of the musculature. If this is so the neural control of the musculature before regression must have been less than average. It follows therefore, that if we can select the proper muscles for testing purposes we should be able to predict those organisms which will regress in the function indicated by the given muscles and the test, given a disintegrating force.

Robert West and Edward Nussbaum, writing for the *Quarterly Journal of Speech*, Volume 15, pps. 469–479, of November, 1929—"Motor Test for Dysphemia"—report a test upon the skeletal muscles used in opening and closing the jaw. The test is claimed to possess diagnostic value not only in determining potential stutterers but in estimating the chances of recovery and the field of the probable cause.

The theory of Regression is an extension of the theories of De Vries, La Marck and Darwin. It advances the notion that, just as organs evolve from earlier organs,[2] so do functions evolve from earlier functions. It seeks to apply the universal concept to a special field, that of disfunctions of the organism of a regressive nature. And as such, attempts to unify the field of speech as a part or link in a universal concept. It attempts to retrace the evolutionary ascent of the organism in definable terms and reduce all disfunctions of the organism of any kind whatsoever, mental or physical, to the same mathematical formula insofar as it is possible.

1. Lumsden, T. Respiratory Centers in the Cat. Journal of Physiology, 1923, LVII, 153.
2. Idem. Regulation of Respiration. Journal of Physiology, 1923, LVIII, 81 and 111.
3. Idem. Chelonian Respiration (Tortoise). Journal of Physiology, 1924, LVIII, 259. Reported by J. Byrne in Medical Journal and Record, February 17, 1926, p. 220, "External Respiratory Mechanism in Injury and Disease."

[2]Quarterly Journal of Speech, Volume 15: 237, April 29, "Iowa Conference on Speech Pathology and Experimental Phonetics" and other citations by same writer.

ETIOLOGY OF FOLLICULAR PHARYNGITIS, CATARRHAL LARYNGITIS, SO-CALLED GLERGYMAN'S THROAT; AND SINGER'S NODES

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It is not within the province of the speech pathologist to offer any medical advice whatsoever to patients suffering from a disturbance of this kind. Yet unless competent service of the nature he should be able to render is called in, the condition inevitably becomes chronic, and may in the end deprive the patient of his voice using profession. For the etiology demands collaboration of the logo-phoniatrist and laryngologist. Since this is so seldom done, or patients are referred to just any voice teacher or "elocutionist," and since so few facts have been known, it may indeed be said that the chronic end result is the usual one; hence the term Chronic is usually tacked on to the above technical terminology. But this is no reason why that condition need be considered so inevitable.

Synonyms.—Simple laryngitis, functional laryngitis, functional aphonia (sometimes, acute or chronic laryngitis), catarrhal (diffuse) laryngitis, laryngorrhoea, subglottic laryngitis, granular laryngitis; follicular, or granular pharyngitis, hypertrophic pharyngitis, pharyngitis hyperplastica lateralis; and incident to purulent nasal accessory sinusitis, chronic lacunar tonsilitis, gastric or intestinal laryngitis, etc.

Contributing etiology.—Dyspepsia, and especially allergic disorders of digestion; heart, liver, kidney, and lung affections; anemia, gout, rheumatism or allied diseases; any laryngeal inflammation associated with acute infections, especially grippe, hence most common in cold, damp climates, winter, late autumn and early spring. Recurrent or persistent acute catarrhal irritation from any source accessory to the larynx, or pharynx. Nasal obstructions, sinus or other infection in that area, causing irritation and consequent suppuration which flows down into the pharynx and larynx. Mouth breathing, which prevents proper sifting, moistening, and warming of the inspired air. Long confinement or work in rooms that are stuffy; in those laden with tobacco smoke, dust and irritant chemical or other fumes; auditoria inadequately ventilated with consequent bad air due to large crowds, or "drafty" rooms, which may be worse if the body is not properly clothed to meet the situation or not "hardened to exposure of that type." Every authority points out that: "Chronic laryngitis is common among alcohol drinkers and smokers," which is

admitted by tobacco company advertisements, reading, "easy on the throat," "not a cough in a car load," "bite removed by patented pipe," or "a mild cigar," etc., all of which says "*that is not true of competing brands*," and in passing it must be said, is untrue of the advertising brand also. It is common likewise among chemical and innumerable types of employees in factories, particularly those working in cement, wood, tobacco, stone, iron, steel, and other metal, where the air is laden with fumes and small particles.

But so far as we are concerned this type of laryngitis is also present among singers, actors and public speakers of all kinds, including teachers, as well as among others whose profession demands even louder voicing, such as newsboys, auctioneers, and vaudeville performers. It is almost universal and severe where screaming and rasping or other bad voice qualities are called for. Hence also often observable where convention calls for qualities of the latter nature; as among "tough guys," (consequently prevalent among criminal types even where syphilis and other factors are absent); likewise among foremen of laboring gangs or military non-commissioned officers who must make severity apparent by loud rasping orders; and it therefore follows that it should also be quite prevalent among actors who habitually portray these parts.

Differential Diagnosis.—Obviously these widely varying types of contributing etiology, should be more sharply differentiated than is the rule, though of course the basic disturbance is essentially the same, with its manifestations probably merely modified thereby and through differences in habits, diathesis or environment. Consequently a careful and most comprehensive case history is called for. It should inquire into all these factors, before we can say much as to the prognosis or treatment. Syphilis, tuberculosis, coryza, and other such pathological factors must be ruled out. Likewise growths, malignant and otherwise, as well as partial paralyses. All of these may seem to produce the same voice qualities (except to technical observers of long experience).

And it is well to bear the fact in mind that in some forms and in certain stages, pharyngeal involvement may not be present whereas the laryngeal most decidedly is. Hence it is unwise to assume as some authors have done, that "diagnosis is never difficult."

Symptoms.—Impairment of the voice is recognized by all authorities as being the principal symptom. The quality may be guttural, harsh, hoarse, husky, breathy, merely "easily tired," or at times partially or even completely aphonic. In singers or indeed speakers it may "break" without warning, and that repeatedly until the user sometimes gets panicky over his or her lack of control. Hoarseness, or "heavy quality," is commonly most marked on awaking (which latter indeed, is to a lesser degree manifest in all normal voices) and as the day progresses, light conversational usage clears the mucous and the voice may become more clear. Yet panic, and excessive hawking or "clearing the throat" to speed the process

may make the voice worse later. And forced speaking or singing may not only cause the voice to tire more quickly, but actually "break" or even trail off into a whisper.

Patients may complain of a constant "tickling" as also of a "dryness," swelling or even "pain in the throat." They may say it is a "real effort to speak," much less sing. And they regularly manifest a persistent urge toward hawking or coughing, which may at times be of a strangling nature.

The medical examiner will establish most of these facts and report certain

Objective Appearances.—In accompanying pharyngitis, an inflammation especially of the back walls beyond the tonsilar area and pillars, may be observed merely by opening the mouth and depressing the tongue. In more severe forms of long standing intumescence, dilated veins, and granular masses may be discovered on the posterior pharyngeal wall. These humps may be as small as a pinhead, or larger than a pea. Often only two or three are present, but sometimes these small glands may be thickly scattered over the whole area, with dilated veins radiating between them. In other cases lymphoid masses appear only along the lateral walls, up into the nasopharynx, and parallel with the posterior pillars (hence the one technical term in the synonyms above).

The *larynx* manifests abnormal conditions even where the pharynx is not involved. Inflammation is commonly apparent in the ventricular bands, pulvinar, and *superior larynx* generally. Indeed the whole neighborhood is distinctly reddened. The ventricular bands are sometimes even so swollen as to obscure the glottal lips below, quiescent or in phonation. The tumescence may be more apparent in one than the other. And in general, the redness of the larynx may be less uniformly distributed than in an acute catarrhal condition.

The *glottal lips* look unhealthy and no longer have their pearly luster; but it must be remembered that in singers with a perfectly normal larynx they may show a pinkish color; so one should not be deceived by an appearance of inflammation which is not actual and only significant where present in a syndrome of symptoms. Their color is more significant where striated in red by enlarged vessels on their surface; actually coated by dark crusts of dried red blood from small ruptures; or where they are a dead grey. The vocal process in these cases may then appear as a white projection into the injected lip proper. Globules, and strings of sticky mucous are seen about the larynx, pharynx, and on the vocal lips, especially in chronic conditions. Such a globule may break and is then often observed stretching from one vocal lip to the other as they open to take a deep breath following phonation. But this fact is only significant again, in a syndrome of symptoms. For even in one with a perfectly normal larynx, mucous gathers very rapidly during shrieking and similar violent voice abuses. Then it is apparently being pressed out of the Ventricles of Morgagni. If the globule

is hard enough in either case, however, it causes breathy quality, and "voice break" when it gets into the anterior commissure, the interarytenoid notch, or between the vocal processes: perhaps also even between the glottal lips, though there, phonation seems to commonly fling it off, and up on to the glottal lip proper. If such breathiness, "voice break," huskiness or aphonic quality is more persistent, it is generally traceable to extensive infiltration of the submucosa, granular interference, or congestion and thickening especially in the interarytenoid notch, and anterior commissure, but also at times in the vocal lips themselves.

Prognosis.—Even if every pathological factor has been eliminated, and consideration is limited strictly to nothing more than the dysphonia or disturbance with which we are actually concerned in this paper, viz., impairment traceable solely to misuse of the voice, authorities almost universally agree, that:

> "in singers and public speakers a guarded diagnosis should be given regarding the full recovery of the staying qualities of the voice."

There are probably at least three reasons for that.

First, too little has been known as to the actual etiology of the latter. It is to be hoped that more information is given in the short note below, and the experiment attached hereto.

Second, treatment has been based too largely on concepts now proven to be false. These were largely drawn from imagination, tradition, and so-called "theories" or "methods" of voice training developed from purely empirical and sometimes fantastic observation having but little in common with scientific facts. Where not actually damaging, many of these at least led both technician and patient off on a wild goose chase. Such was the scientifically entirely untenable assumption that one could "place" or "focus" between the eyes, or against the teeth, or some other small area no bigger than a dollar, a tone pitched say at middle c′ on the piano (256 cps.) having a four foot broad wave front moving at the rate of 1120 feet per second. Obviously any such sound wave will fill the whole mouth at once. We might as well talk of dousing a water bucket full of water into the mouth and of concentrating it all onto one tonsil. Not the least of those offenders making such assumptions were medical doctors who assumed their M.D. qualified them also as voice teachers. So they devised "voice theories" or "methods" of their own, an error as reprehensible as for the voice teacher to start prescribing medicines, or your author to do either. One of those "M.D. voice teachers" in New York, recommended "for the reduction of nodules of attrition on the cords" the following:

> "Bring forward the tone. . . . To ascertain if the mouth focus is correct, simply pluck the lower lip with the finger as you would pluck the string of a musical instrument, and if the mouth tone is sufficiently far forward

> an explosive sound like *Mum* will answer. . . . If we have not interfered with our focus of attack we hear the initial *Hum* still vibrating pure and beautiful in the facial resonators. . . . These are the exercises so much appreciated by singers . . . which, strange to say, have been the object of ridicule by certain laryngologists."

Little wonder that his fellow laryngologists ridiculed him. It is difficult to imagine more fallacies stated in relationship to fewer actually tenable scientific facts. But it is "treatment" of this kind which perforce had to be relied upon. Efforts to ascribe this type of dysphonia to "inadequate use of the accessory sinuses" or to "lack of nasal resonance," etc., the other two most basic nostrums utilized, fall in the same category. If scientists fell into such errors, and had so few real facts at their disposal, is it any wonder that "guarded" statements about prognosis should have been recommended?

Third, and finally, nobody could be found who was really qualified to collaborate with the doctor in correction of the misuse and primary causal factor in what ultimately developed into disturbing laryngeal and pharyngeal pathological manifestations. The fault can be placed at the door of no individual or group. For until very recent developments, facilities were not at our disposal for making careful studies of the actual primary etiology—what it is that constitutes a misuse leading to such radical disturbance in nature's voice producing mechanism.

Our study which led to some of those developments, has been a prolonged one. The American Academy of Teachers of Singing initiated it, and when intrusted with the task, a subsidy was provided the author by the Carnegie Institution of Washington. This was supplemented by others from a number of corporations, not the least of which was from the Electro-Surgical Instrument Company and the Eastman Research Laboratories of Rochester through my much appreciated collaborator, Clifton Tuttle, so that all told we have now spent over $30,000 on the study. Some of these were the outgrowth of rapid motion pictures which were the first to be made of unimpeded vocal organ position in phonation, without depressing the tongue or otherwise interfering with its movement or that of any other vocal organs.

The experiments below are extracted from one of these which represents but a small part of the total attack on the problem. Other phases have definitely eliminated so-called "nasal resonance" and "resonance of accessory sinuses" as factors in good voice production.

So it would appear that the primary causes may be traced to muscular misuse, with possible bad breathing, environmental conditions, and emotional aspects as major contributory causes. If that be true, the prognosis may in time appear more hopeful than the laryngologist first quoted above indicated it has been in the past.

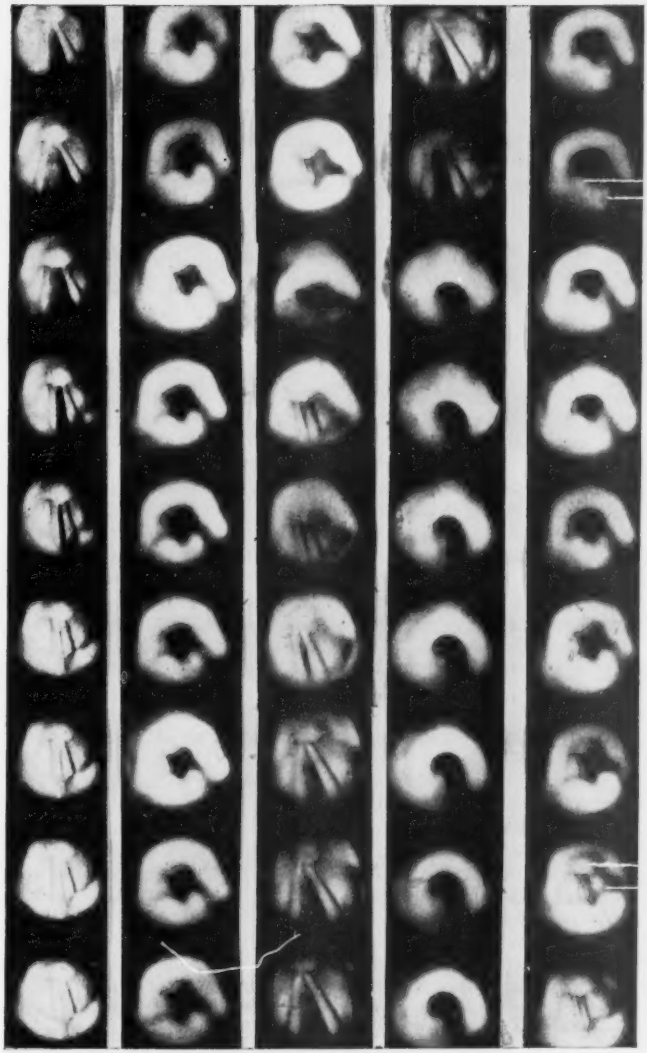
Primary Etiology.—When we leave aside the contributing factors above, and devote our attention solely to the most likely basic factor in the primary etiology, we finally resolve it into what has been called "misuse of the voice." That designation probably wounds the sensibilities of many a fine and well trained artist. "Strain" in the use of the voice would probably be better. For that does not imply bad training, which may in no wise be involved.

Loyalty to the audience, and the consequent keeping of a long advertised engagement while suffering from a coryza or even the simplest sore throat, must inevitably lead to such a "strain." The laws of the platform are inexorable on this point—"the show must go on." The artist drives herself on, in spite of her own, and the doctor's, better judgment. She might just as well take a dry stiff brush and submit a sensitive, inflamed skin area, to a prolonged and violent scrubbing. If that is repeated one time after another, the raw irritation resulting could easily be predicted.

The dysphonia resultant from attendance at a wildly cheering football game is, however, probably the type we should give attention to first. For here is a "strain" with no contributing pathology present. What was done to cause the disturbance? For one thing the voice is forced to its maximum loudness. For another, the pitch is raised, as is common in tense emotional situations, without the subject even being aware of his tendency. As evidence listen to the strident quarreling of two women over the back fence. Or even note the distinct rise in pitch level when an untrained speaker rises to the defense of a pet issue about which he feels strongly, when it is attacked in a political convention where the emotional tension is characteristically keyed-up. Furthermore, at a football game, the masking effect of untold voices around one, also vociferously vocal, leads one to increase both the loudness and pitch more than he thinks he does. You say he "shrieks" though the staid individual may deny that he did.

The result is he discovers on arising the next morning if not before, that he cannot speak above a whisper, or if less severe that his voice is husky, or rough. Here then is a case in the beginning stages of what our unfortunate loose and unscientific terminology designates as "clergyman's throat," or equally bad as "functional or simple laryngitis." And we know precisely what the etiological background was. He indulged in a prolonged voicing which was so loud and high pitched as to be well above the easy, "freely" produced level his voice mechanism was trained to produce. But why should that cause trouble, and inflammation?

Is the disturbance caused by failure to focus the tone *dans le masque* or bring it *forward onto the lips*, or *against the teeth*, as Dr. Holbrook Curtis would have had us believe? Or due to *failure to use the nasal accessory sinuses properly*, as many of his colleagues would have it? Or a *forgetting to use nasal resonance*, which some other authorities have implied to be the causal factor in this laryngitis?



RAPID MOTION PICTURE OF "STRAIN" TONE—STRIDENT QUALITY

This motion picture technique does not depress the tongue, pull it out, or otherwise impede normal vocal organ function.

Left row shows the free, easy tone production. The next and the final three show "tight, white or bright" tones. The next to the last, a labored strident tone under maximum "strain."

Is it not odd that nobody thought to look at the reed of this human organ pipe in order to discover the cause of its husky tone, but persisted in looking solely at the resonator above it? Of course the implication in that last question is not strictly fair, for every doctor at least, has recognized the immediate cause of the breathiness, huskiness, hoarseness, or aphonia, as due to mucous or granular interference, or to infiltration preventing proper approximation. Where most of us failed was in *trying to account for the cause of the cause*, or in other words, determine the primary etiology. There we left the sound source and went searching around in the so-called "head resonators" above the larynx. Dr. Floyd Muckey was a possible exception, though he did not consider this problem specifically. He nevertheless talked a great deal about the "interference of the false cords."

The experiment accompanying this article, shows that a far more complex mal-function of the vocal mechanism than mere false cord impingement is set up in creating loud strident tones of this nature. And we have just demonstrated that such tones can be made to invariably create the laryngitis we call "clergyman's throat."

Great and unbelievably excessive strain is manifest in the whole musculature of the larynx, for one thing. The outer edges of the epiglottis are closed in around the interior "voice box" with as violent a choking action as the musculature is capable of creating. Inferior thereto, the arytenoids are just as violently tipped forward. The cartilages of Wrisberg move forward with them, and the pulvinar backward while the ventricular bands close in laterally, all under violent tension, so as to more decidedly accentuate the choking action. No wonder such a singer sounds as if he were being choked while shrieking, or that we should designate less severe types as "necktie tenors." The resultant is that there is superimposed upon the glottal lips proper a sharply reduced little chimney of stiff tissue, which leaves them no freedom whatever to vibrate freely, except along the merest thin inner edge of the conus elasticus. Even these two edges must therefore be submitted to the most violent lateral, as well as posterior-anterior tension. The inevitable result will be that the glottal lips are forced to slap against each other under the most violent conditions imaginable, instead of having this motion checked by the usual soft cushion of air in the glottal slit. And all one has to do is to indulge in a prolonged violent slapping of one place on the top of his hand to discover what a painful irritation may be thereby created.

Over and above that fact "strain" is also shown elsewhere, as in the intrinsic muscles supporting the larynx. Pressure on the genio and mylo-hyoid, by the thumb pushing up just behind the chin, will show that area to be usually relaxed on soft easy vocalization of "ah" (in contradistinction to "ee"). But as soon as we attempt to so raise the loudness and pitch as to shriek, even on "ah," great tension results. The same type of "strain" may be palpated in the lateral muscles of the neck. And if the mouth is opened it may also

be noted that the velum, pillars of the fauces, and entire posterior pharynx, become equally hard and tense under the like "strain" to which they are submitted. Other experiments of ours, not given herewith, demonstrate that the muscles around the naso-pharynx are thrown into similar violent tension and "strain." The respiratory muscles likewise.

In other words, the primary etiology points to "strain" as the real "microbe" responsible for "clergyman's throat." Surely we need not call attention to the way in which the blood vessels in the neck, and on the forehead stand out, the head swims, and even small ruptures are known to take place when similar straining is indulged in during defecation, or angry yelling. In other words, actual physiological injury may result from "strain." Furthermore, we referred above to the mechanical irritation which may follow from friction resulting therefrom, and to the inflammation which inevitably results from the mechanical heat generated thereby.

Such "strain" in the muscles prevents free circulation of the blood to the whole area round about, and consequently impedes proper drainage. Stasis very shortly results, which is followed by congestion and inflammation. Proper nourishment of the parts is thus interfered with. If this is kept up and the irritation is constantly repeated, the follicles finally become diseased and enlarged. Granulation of the mucus membrane then follows. Since as above indicated, the "strain" is manifest not only in the intrinsic muscles of the larynx, but also in its extrinsic supporters, and those of the pharynx well up into the nasal passages, the follicular disturbance may extend well up into that area. Infiltration follows, in the arytenoid area especially, and finally growths, such as so-called singer's nodes, or even worse indurated and nodular excrescences, due to changes in the epithelium from the normal to the stratified, ending in *pachydermia laryngitis*, and sometimes partial or complete paralysis.

Thus there results finally, a distinctly pathological condition, all of which started from a simple functional dysphonia, following "strain," or mis-use of the voice. Neither the doctor or phoniatrist is in the end capable of handling the situation alone. For a rather intimate colloboration is demanded. And the latter must have not only a knowledge of the facts, but a well trained ear to detect shifting qualities, and a series of carefully worked out techniques to correct the same.

Prevention is not dependent solely on speaker or singer having a thoroughly and properly trained voice. Nor in refusing to sing when known inflammation is present. Neither in avoiding wild cheering or screaming. For emotional situations such as panic or fear on appearance before an audience are known to lead to a tense keyed-up "strain" in the best of artists. One must know how to offset any such tendency. The same may be said of the best trained speaker who foolishly may at times allow himself to also be too keyed-up by the emotional demand made upon him. Such a situa-

tion may well occur in the life, especially of a lawyer for example, in his plea to a jury. Or of a clergyman called upon to preach a particularly trying funeral sermon. The need for ample sleep, rest and relaxation preceding such an ordeal; and of well trained devices for restoring self-mastery, poise and calm in trying situations, can certainly not be overemphasized.

Since, however, the experiment shows "strain" to be particularly manifest on high pitches and loud tones, it follows that both could in the beginning of any such ordeal, be carefully avoided. The most outstanding preacher in this large city recently remarked that the finest axiom any teacher had ever left with him might be stated in the words: "as you arise to speak and step forward establish your trained calm deep rhythmical breathing pattern, sweep your audience with a quiet and tender, friendly look, but above all, *get your pitch* and constantly recur to it in the course of your speech. Otherwise the pitch level is likely to rise progressively as you warm up to your subject."

It is equally important for a singer to know how to so build a program that the first numbers do not demand the utmost of one's capability. Certainly unless he is in the best of voice and perfectly sure of himself, the first numbers would not call for the highest pitch and loudest tones of which he is capable. Even in opera he should learn to deliberately hold himself back when he knows his voice needs nursing.

So far as a beginning speaker and singer is concerned, it is quite important that for months and perhaps years, she be restrained from more than gradually working into loud high pitches, or in other words from too rapidly forcing and extending her register on loud tones.

The success of such corrective exercises as have been recognized, has probably been in no small measure due to the soft vocalization they called for. And the preponderance of sopranos especially, but also of tenors, among those suffering from nodes on the vocal lips, yet who avoid smoking, drinking, and other contributory causes, points to the demand on them for pitches that are too high and loud.

Such catarrhal laryngitis and other above mentioned disorders, it is true, are often due to other different primary mis-use etiologies traceable to voice mechanism adjustments and abuses which we shall consider in later articles. Some of these, for example, involve exactly the opposite kind of superior laryngeal mal-adjustments responsible for consequent irritations.

PROGRAM

THE AMERICAN SPEECH CORRECTION ASSOCIATION

December 29, 30 and 31, 1936

Tuesday, December 29—Morning

8:00 A. M. Registration begins.

THE PRESIDENT'S ADDRESS

9:00 A. M. LEE EDWARD TRAVIS, University of Iowa.

STUDIES OF STUTTERING

Presiding—LEE EDWARD TRAVIS, *President*

9:15 A. M. "The Preparatory Set in Stuttering, Its Nature and Use," (15 min.),
C. VAN RIPER,
Kalamazoo, Mich., State Teachers College

9:45 A. M. "A Conditioned Reflex Study of Stuttering," (15 min.),
WILBUR MOORE, Kent State University, Ohio

10:15 A. M. "Symptomotologies of Young Stutterers," (15 min.),
MACK D. STEER, Purdue University

10:45 A. M. "The Influence of Grammatical Function, Phonetic Value and Word Position on the Incidence of Stuttering," (15 min.),
SPENCER F. BROWN, University of Iowa

11:15 A. M. "Certain Cues Associated with Precipitation of Moments of Stuttering," (15 min.),
WENDELL JOHNSON, University of Iowa

11:45 A. M. "Anticipatory Reactions of Stutterers," (15 min.),
ROBERT MILISEN, University of Iowa

(Time for discussion)

Tuesday, December 29—Afternoon

MISCELLANEOUS AND THERAPY

Presiding—G. OSCAR RUSSELL, Ohio State University

2:00 P. M. "Clinical Significance of Left Handedness," (20 min.),
BRYNG BRYNGELSON, University of Minnesota

2:30 P. M. "Does the Intelligence Quotient Change with Speech Training," (20 min.),
SARA S. HAWK, Child Guidance Clinic, Los Angeles

3:00 P. M. "Leaves from a Speech Teacher's Case Book," (20 min.),
OLLIE BACKUS, Grinnell College, Iowa

3:30 P. M. "The Organization of the Children's Speech Clinic," (20 min.),
JAMES F. BENDER, College of the City of New York

4:00 P. M. "Silent and Oral Reading in Stutterers and Normal Speakers," (20 min.),
HENRY MOSER, University of Michigan

(Time for discussion)

Wednesday, December 30—Morning

Program furnished by staff of Central Institute, and other contributors from St. Louis

Presiding—MAX A. GOLDSTEIN, M. D.,
Central Institute for the Deaf

Wednesday, December 30—Afternoon

Statler Hotel, Washington Avenue at Ninth and St. Charles Streets

Presiding—MAUD MAY BABCOCK, *President*,
The National Association of Teachers of Speech

2:00 P. M. "Encephalographic Brain Wave Studies in Stutterers and Non-Stutterers," (30 min., lantern slides),
LEE EDWARD TRAVIS, State University of Iowa

2:40 P. M. "Sound Movie Films of Speech Activities and Speech Pathologies and Their Correction," (30 min.),
MAX A. GOLDSTEIN, M. D.,
Central Institute for the Deaf, St. Louis

3:20 P. M. "Motion Picture Studies of the Larynx," (20 min.),
JOEL J. PRESSMAN, M. D., AND ARTHUR HINMAN,
Lebanon Hospital, Los Angeles

4:00 P. M. "Stuttering as an Emotional and Personality Disorder," (20 min.),
MEYER SOLOMON, M. D.,
Northwestern University Medical School

4:40 P. M. "Disorders of Speech Perception," (20 min.),
ROBERT M. WEST, University of Wisconsin

Thursday, December 31—Morning

TECHNIQUE AND THERAPY

Presiding—ROBERT M. WEST, University of Wisconsin

9:00 A. M. "Four Devices in the Treatment of Rhinolalia Aperta," (15 min.),
CLAUDE E. KANTNER, Louisiana State University

9:30 A. M. "Experimental Speech Re-education Program for Pre-School and Primary Grade Children," (15–20 min.),
HAZEL DUCLES, Northwestern University

10:00 A. M. "Intensive Objective Studies in Stuttering; Preventive and Therapeutic Indications," (15 min.),
ELVENA MILLER, Roosevelt High School, Seattle

10:30 A. M. An Integration of Stuttering Therapies," (20 min.),
EUGENE HAHN, University of Southern California

11:00 A. M. "The Cause of Reading Disabilities and Their Remedy," (20 min., stereoscopic slides),
SAMUEL D. ROBBINS, Emerson College, Boston

(Stereoscopic Slides)

REDUCED RAILROAD FARES TO ST. LOUIS

Including All Points South of the Ohio River and the Potomac River and East of the Mississippi River

I quote from a letter from the Southeastern Passenger Association dated October 27, 1936:

> "Southeastern carriers have in effect daily reduced round-trip fares on basis of 2 cents per mile in each direction for tickets bearing limit of 15 days in addition to date of sale, and 2½ cents per mile in each direction for tickets bearing limit of six months in addition to date of sale, going and returning same route, tickets being honored in sleeping or parlor cars upon payment of sleeping or parlor charges; also round-trip tickets good in coaches only on basis of double the lower one-way coach fare of 1½ cents per mile with limit 30 days in addition to date of sale, except that certain carriers particularly in the extreme western part of the territory maintain coach rates of 2 cents per mile."

Please note that the first class fare is the same as that west of the Mississippi, but the time limit is only 15 days. The coach fares are somewhat different, but the time limit is the same limit of 30 days in coaches.

Those of us who live north of the Ohio and Potomac Rivers and east of the Mississippi River must pay 3 cents a mile in Pullman cars each way; all others pay but 2 cents per mile each way if they return within 15 days east of the Mississippi River or within 30 days west of the Mississippi River.

I have just been advised by the Southwestern Passenger Association, The Trans-Continental Passenger Association, and the Western Passenger Association that round-trip tickets, good for thirty days, are to be available in all territory west of Chicago, St. Louis, and the Mississippi River through to the Pacific Coast for 2 cents per mile each way in sleeping and parlor cars (sleeping accommodations extra) and for 1.8 cents per mile in coaches. This will save our western members quite a little.

Samuel D. Robbins,
Secretary.